For Discussion Purposes Only:

Draft Service Goals and Objectives for the Federal Energy Regulatory Commission (FERC or Commission) Projects on the Tuolumne River and the Merced River

Several resource goals and objectives form the basis of the Service's participation in the FERC licensing process for the Don Pedro Hydroelectric Project (P-2299) in the Tuolumne River and the Merced River Hydroelectric Project (P-2179-042) (Projects). The Service is directed to employ an ecosystem approach to ensure conservation of fish and wildlife resources throughout all of its programs. This includes participation in the Commission's licensing processes. The ecosystem approach requires the Service to adopt a comprehensive view within regions and watersheds. Accordingly, the Service encourages the development of comprehensive watershed management plans that foster ecosystem health, through identification of dominant geomorphological features and processes, land use practices, and other activities that may be affecting the drainage. This approach provides for a more thorough analysis of effects to fish and wildlife resources caused by activities such as hydroelectric development, agriculture, grazing, and other human disturbances and identifies a broader range of opportunities for ecosystem improvements.

One Service goal is to conserve and restore the essential attributes of the watershed ecosystem affected by the Projects. These attributes include: (1) seasonal discharges that are patterned after the timing, frequency, magnitude, duration, and rate-of-change of the natural unimpaired hydrograph; (2) channel features, floodplains, and riparian vegetation that are shaped, adjusted, and maintained by sufficient instream flows and overbank events; (3) the conservation and enhancement of natural patterns of the supply, transport and storage of sediments and large woody debris so that imports at the upstream end of a reach are balanced by exports at the downstream end; (4) compliance with water quality standards; (5) the conservation and enhancement of indigenous aquatic, semi-aquatic, and riparian biota, as well as species dependent upon these biota; and (6) the conservation and enhancement of available habitats for these indigenous biota by sufficient instream flows and the necessary components of a natural unimpaired hydrograph. Achieving the goal of conserving and restoring watershed ecosystem attributes underlies the basis for the Service's recommendations pursuant to section 10(j) of the Federal Power Act (FPA).

To achieve the Service's ecosystem goal, an objective of the Service is the design of an instream flow regime that will protect and enhance stream connectivity, water quality, and aquatic habitat from the Project affected stream reaches downstream to the San Joaquin River, Sacramento-San Joaquin River Delta, and San Francisco Bay to the Pacific Ocean. This task requires that the Service obtain, review, and interpret information regarding the effect of the Projects on several resource areas: watershed hydrology; water quality; fluvial geomorphological processes (including supply, transport, and storage of coarse sediment and large woody debris); the distributions and abundances of aquatic, semi-aquatic, and riparian biota, as well as species dependent upon these biota (e.g., the bald eagle); the availability of suitable habitat, expressed as a function of discharge, for affected species; and the compatibility of recreational uses with the habitat conditions required by fish and wildlife.

To achieve the conservation and enhancement goals of watershed ecosystem restoration, the Service has the following objectives:

1. Ensure implementation of the Anadromous Fish Restoration Program (AFRP), which is tasked by the Central Valley Project Improvement Act to make "all reasonable efforts to at least double natural production of anadromous fish in California's Central Valley streams on a long-term, sustainable basis.".
2. Recommend and support design and implementation of dam passage solutions for anadromous fish to reach their historical spawning and upstream habitats. In support of this objective, the Service seeks to gain a better understanding of the impediments to dispersal on the main stem Tuolumne and Merced rivers and the life-history characteristics and genetics of the anadromous and landlocked salmonids in the Tuolumne and Merced rivers. This information is needed to assist the Service in developing FPA Section 18 prescriptions.
3. Seek FERC license conditions, protection, mitigation and enhancement (PM&E) measures that sustain normal ecosystem functional processes. These may include conditions that mimic the natural unimpaired hydrologic and hydraulic patterns, and geomorphic processes such as sediment transport, channel maintenance, channel feature diversity and complexity, and chemical/physical characteristics, such as water temperature, nutrient transport, and water quality (chemical constituents). Maintaining these functional processes during the term of the new license will in turn provide the habitat to support healthy fish and wildlife populations.
4. Support integrated watershed management, specifically integration of FERC licenses with the concurrent State Water Resource Control Board (SWRCB) Regulatory Proceedings in the San Joaquin River Basin.
5. Recommend data collection and reporting consistent with the Service's draft Comprehensive Assessment and Monitoring Program (CAMP), and CAMP Rotary Screw Trap (RST) protocol.

A Service goal is that the ongoing SWRCB proceedings regarding the development of improved flow regimes to benefit aquatic resources in the San Joaquin River basin be integrated into the Commission's environmental analysis. The first of these proceedings considers the review of and potential amendments to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). Specifically, the SWRCB is considering the water quality objectives for the protection of southern Delta agricultural beneficial uses, San Joaquin River flow objectives (including the Tuolumne River) for the protection of fish and wildlife beneficial uses, and the program of implementation for those objectives. The second set of proceedings considers the SWRCB's development of a comprehensive report and associated public proceedings regarding new flow criteria for the Sacramento-San Joaquin Delta Estuary (including inflows from the Delta source waters – San Joaquin, Stanislaus, Tuolumne, and Merced Rivers) in response to California State legislation enacted in November 2009. In that legislation, California enacted a comprehensive package of four policy bills and a bond measure intended to meet California's growing water challenges by adopting a policy of sustainable water supply management to ensure a reliable water supply for the State and to restore the Delta and other ecologically sensitive areas. One of these bills, Senate Bill No. 1 (SB 1) (Stats. 2009 (7th Ex. Sess.) ch 5, § 39) contains the Sacramento-San Joaquin

Delta Reform Act of 2009 (Delta Reform Act), Water Code section 85000 et seq. In determining the extent of protection to be afforded public trust resources through the development of the flow criteria, the SWRCB is considered the broad goals of the planning efforts the criteria are intended to inform, including restoring and promoting viable, self-sustaining populations of aquatic species.

Another Service goal for the new licensing of the Projects is to include license conditions that sustain normal ecosystem functional processes and that are consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project (§10(a)(2) of the Federal Power Act, 16 U.S.C. section 803(a)(2)(A)). Project license conditions should support the actions and evaluations in the Final Restoration Plan for the Anadromous Fish Restoration Program that were developed to achieve the doubling goal for the Tuolumne River and the Merced River of 38,000 and 18,000 naturally spawning Chinook salmon (*Oncorhynchus tshawytscha*), respectively (USFWS 1995, USFWS 2001). License conditions should mimic the natural unimpaired hydrologic and hydraulic patterns, and maintain geomorphic processes such as sediment transport, channel maintenance, channel feature diversity and complexity, and chemical/physical characteristics, such as water temperature, nutrient transport, and water quality (chemical constituents). Maintaining these functional processes during the term of the new license will in turn provide the habitat to support healthy fish and wildlife populations.

The Service encourages implementation of an adaptive management strategy that allows for continued evaluation and adjustment of measures over the term of the license, to maintain the desired level of protection for fish and wildlife resources. The adaptive approach is particularly appropriate where there are insufficient data and uncertainties about those measures that will be most effective for meeting ecosystem goals and objectives. This is consistent with the adaptive strategy for Protection, Mitigation, and Enhancement measures being implemented successfully on several new or amended Commission licenses recently issued in California, e.g., Lower Mokelumne River (FERC #2916), Rock Creek-Cresta (FERC #1962), and Mokelumne River (FERC #137). These licenses required the establishment of a technical assistance group to assist the licensee in developing and implementing post-license specific measures and monitoring performance of those measures over the term of the license. These licenses include resource tools available to the licensee and the technical assistance group, such as blocks of water, flexible flow schedules, funding and other tools for real time monitoring, and responsive actions to improve resource protection.

The Service encourages the use of standardized reporting, such as complying with the Service's CAMP, which is a program for standardized data collection and reporting that is an essential component in assessing the status of anadromous fish in the Central Valley. The Service has developed a CAMP RST protocol, which describes protocols and standards for collecting, recording, analyzing, and reporting RST data.

Following a proceeding that resulted in a Settlement Agreement, on July 31, 1996, FERC adopted an Order amending the original Don Pedro license to adopt a revised Article 37 regarding minimum stream flows in the Tuolumne River (76 FERC 61,117). The Settlement

defined minimum flows as well as pulse flows for spawning and rearing purposes downstream of La Grange Dam, ramping rates to minimize the potential for stranding, and habitat restoration projects aimed at improving geomorphic and river channel conditions, in an attempt to improve conditions for fall-run Chinook salmon. However, technical studies have demonstrated that the levels of resource improvements needed for the new license are substantial since Chinook salmon populations have not recovered and the spawning, rearing, and outmigration conditions in the Lower Tuolumne River continue to be directly impacted by the Project. Moreover, the amended license and its minimum instream flows do not consider the flow needs of Central Valley steelhead, a species that is listed as threatened under the ESA.

The 1996 license amendment further requires the Licensees to file the results of fisheries monitoring studies by 2005, under Article 58. On March 25, 2005, the Districts filed the Summary Fisheries Report pursuant to this Article 58 requirement. Commission staff issued an order on the Summary Report on April 3, 2008 (123 FERC 62012), to which the Service, other agencies, and Conservation Groups requested rehearing. In response, the Commission on July 16, 2009, issued an Order on Rehearing, Amending License, Denying Late Intervention, Denying Petition, and Directing Appointment of a Presiding Judge for a Proceeding on Interim Conditions (123 FERC 61035). The Service actively participated in this Proceeding (ALJ Proceeding), providing factual support for the conclusion that the minimum flows required by Article 37 of the Project license are insufficient, and that as a result, the Project's reduction of natural streamflow is contributing to the decline of Central Valley steelhead and Central Valley fall-run Chinook salmon in the Tuolumne River and that interim measures are necessary to protect fishery resources on the Tuolumne pending Project relicensing. The Service provided written and oral testimony of its biologists and other expert witnesses, demonstrative exhibits, the submission of working papers relating to the Project, and the review of relevant scientific literature, and submitted pleadings in response to the Final Report of the Presiding Judge on Interim Measures (129 FERC 63015; November 20, 2009). To date, and as part of the new licensing process, the Commission has not issued a decision relating to Interim Measures.